HONEYBEE ROBOTICS
Spacecraft Mechanisms Corporation

Microsat CMG Attitude Control Array

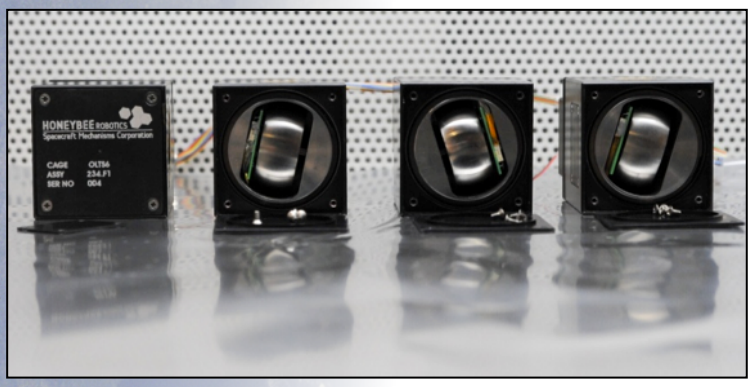
Specification	Data
Mass	
Single CMG	600g
Control Electronics (for 4 CMGs)	700g
Size	
Single CMG	48 x 48 x 91 mm
Control Electronics*	215 x 115 x 25 mm
Box 90 Array (w/ electronics)*	230 x 125 x 82 mm
Power	
Single CMG, steady state	1.5 W
Single CMG, peak torque	2.0 W
Box 90 Array, steady state	8 W
Box 90 Array, Peak	10 W
CMG Momentum	
Rated Power, per CMG	56 mNm^{-s}
Enhanced, per CMG	86 mNm^{-s}
Box 90 Momentum Envelope (ellipsoid)	112 x 112 x 224 mNm^{-s}
CMG Torque	
Rated Power	112 mNm
Enhanced	172 mNm
Wheel Rate	8,000 rpm (nominal) 12,000 rpm (max)
Radiation	
CMG	100krad
Control Electronics	10krad (100krad in dev.)
Interface	RS232 or RS422 Torque Triple Command or individual CMG rate commands
Operating Temperature Range	-20 to +85° C
* CubeSat-Compatible Option Available	

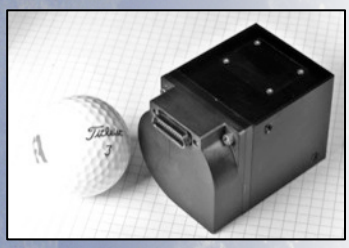
Description

Honeybee Robotics' **Microsat Control Moment Gyroscope** modules provide small spacecraft with unprecedented agility and pointing capabilities. They offer an order of magnitude superior performance over reaction wheels, at a fraction of the power.

Our Microsat CMG modules can be packaged together as a unit in any configuration, or they can be distributed to offer packaging flexibility. The scissored pair arrangement is designed to provide a seamless replacement for traditional reaction wheels.

Our integrated steering law controller can host a standard Box-90 pseudo-inverse steering law, or support a user-defined steering law.





Contact

Honeybee is ISO9001:2000 and AS9100C certified.

Honeybee Robotics
Spacecraft Mechanisms Corporation

Erik Mumm
VP & Director of Flight Systems
Mumm@HoneybeeRobotics.com
(720) 340-4491